PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

EXPRESS MAIL NO. EL521378162US

Applicant	:	Matthew James Fischer, et al.
Application No.	:	Not Assigned
Filed	:	Herewith
Title	:	A METHOD OF CONTROLLING DATA SAMPLING CLOCKING OF ASYNCHRONOUS NETWORK NODES IN A FRAME-BASED COMMUNICATIONS NETWORK
Docket No.	:	42146/RJP/E264

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Post Office Box 7068
Pasadena, CA 91109-7068
April 4, 2001

Commissioner:

IN THE SPECIFICATION:

Please amend the specification as follows:

Delete the paragraphs from Page 12, line 29 through Page 13, line 6 , and replace them with the following new paragraphs:

--Fig. 70 shows a VoIP system in accordance with the present invention.

Fig. 71 shows packet arrival timing relationships in accordance with the present invention.

Figs. 72a and 72b show transmit queues before and after priority frame reordering respectively in accordance with the present invention.

Fig. 73 depicts a VoIP system in accordance with the present invention.

Figs. 74 and 75 show upstream and downstream latency components in accordance with the present invention.--

Delete the paragraphs from Page 117, line 13, through Page 118, line 18, and replace them with the following paragraphs:

--Rate Selection refers to the algorithm by which B chooses ($S_{i,desired}$, $b_{i,desired}$). Each of the algorithms presented use some or all of the following input statistics upon receiving packet P_i, (squared error refers to squared error refers to squared decision point error): Header rate, (s_{min},b_{min});Header error indicator, $X_{hdr,i} \in \{0,1\}$, O indicates error-free header, 1 indicates header error; Header sum of squared error, $\epsilon_{hdr,i}$; Header maximum squared error, $E_{hdr,1}$; Header length symbols), n_{hdr}; Payload rates, (S_i, b_i); Payload error indicator, $X_{hdr,i} \in \{0,1\}$, 0 indicates error-free payload, 1 indicates payload error; Payload sum of squared error, $\epsilon_{pld,i}$; Payload maximum squared error, $E_{pdi,i;}$Payload length (symbols), $n_{pld,i}$; FSE power for each symbol rate in S, $P_{FSE,s,i,}$ and Normalized, per-symbol ISI power estimate for each symbol rate in S, $P_{ISI,s,i}$. Given these input statistics, each algorithm maintains state variables, performing computations based on the input statistics and state variables, first to select the new desired constellation size from R_s for each symbol rate in S, then to select the new desired symbol rate from all those in S. Two algorithms are presented, requiting different amounts of state storage and computation:(1) Mean Squared Error Algorithm and (2)Maximum Squared Error Algorithm. For the purpose of constellation size selection, we initially assume that only a single symbol rate, s, is under consideration, and that $s_i = x$ for all i.

With regard to the Mean Squared Error Algorithm, error rates of candidate constellations are estimated, selecting constellation to maximize throughput subject to maximum length packet, maximum PER constraint. If we assume that: probability of symbol error is independent from symbol to symbol, hence:

$$PER(SNR,b) \equiv 1-\left(1-SER\left(SNR,b\right)\right)^{\frac{N_{\max}}{b}}$$

where:

$N_{\max}$ = maximum packet length (bits)

b = candidate constellation size (bits per symbol)

SNR = symbol decision point signal to noise ratio, normalized by loss in mean symbol energy of constellation size b relative to constellation size $b_{\min}$

SER = symbol error rate

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REMARKS

Please enter this Preliminary Amendment in the above-referenced application being filed herewith.

The Applicant has amended the Brief Description of the Drawings to correct typographical errors identifying Figs. 70 - 75 with their appropriate descriptions. The Applicant submits that no new matter has been added.

The Applicant has also amended the Detailed Description to correct a typographical error of a wordprocessing equation mislocation. The Applicant submits that the corrected location is now consistent with that of the comparable text set forth in U.S. Application No. 60/196,002 incorporated by reference and that no new matter has been added.

Marked-up version of the changes made to the specification by the current amendment are not included since paragraphs herein are merely being deleted and new paragraphs added in place thereof.

Respectfully submitted,

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